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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/459,380
Filing Date: December 13, 1999
Appellant(s): HUBOI, PETER ALLEN

Robert McCutcheon
Reg No. 38,717
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed April 15, 2010 appealing from the Office action mailed September 10, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-3, 5-12, 14-19, 21-25, and 27-54 are pending in the application.

The rejections of claims 1-3, 5-12, 14-19, 21-25, 27-29, 47, 48, 51 and 52 have been withdrawn.

Claims 30-46, 49, 50, 53 and 54 remain rejected.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner.

The section 103 rejections of claims 1-3, 5-12, 14-19, 21-25, 27-29, 47, 48, 51 and 52 have been withdrawn.

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5,625,748	McDonough et al.	4-1997
6,327,343	Epstein et al.	12-2001

Sadaoki Furui, "Digital Speech Processing, Synthesis, and Recognition," Marcel Dekker, Inc., New York, 1989, pp. 225-289,

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

McDonough and Furui

1. Claims 30, 32, 35-37, 39-41, 43-44, 46, and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] and Epstein [US Patent 6,327,343] in view of Sadaoki Furui, "Digital Speech Processing, Synthesis, and Recognition," Marcel Dekker, Inc., New York, 1989, pp. 225-289, both already of record.
2. Regarding claim 30, McDonough describes the claimed limitations as a whole recognizable to one versed in the art as the embodiment for processing untranscribed speech comprising:

storing actions [at column 2, lines 14-17, as create a new node associating an action with a word];

receive a voice message [at column 1, lines 53-54, as provide an input speech message];

speech [at column 6, lines 23-29, as untranscribed speech data];

predetermined patterns of speech [at column 7, lines 27-37, as HMMs from training and modeling];

analyze the voice message to determine if it exhibits a predetermined pattern of speech [at column 5, lines 43-50, as process a spoken message to produce a signal for the potential speech events in the spoken data];

perform actions if the predetermined pattern is found in the voice message [at column 2, lines 1-8, as route the message according to the action associated with the word].

Although, McDonough [at column 7, lines 27-44] describes spotting the words and phrases of the speech data using phonetically trained HMMs for the preferred embodiments, McDonough describes using HMMs for this method as known techniques. Consequently, McDonough does not describe details of the techniques. In particular, McDonough does not explicitly describe HMMs representing either a tone of speech or a frequency of speech.

Furui [at page 255, lines 29-38 & page 258, lines 16-18] describes widely investigated word modeling by phonetic HMMs and that feature vectors are applied in HMMs. Furui describes:

the predetermined pattern representing a tone of speech in the voice message [at page 8, lines 1-15 and Fig. 8.15, as a lattice taking account of allophones, coarticulation, stress, and syllables];

the predetermined pattern representing a frequency (or other) of the speech in the voice message [at page 278, lines 3-9, as Markov models for recognition of input speech converted into spectral feature vectors by DFT].

In view of the teachings of Furui about the essential nature of voice containing frequency and tone, McDonough's stored voice representations must represent the frequency and tone of voice; however, to the extent that McDonough's stored voice representations of phonemes, words, and phrases may not innately represent frequency (or tone), it would have been obvious to one of ordinary skill in the art of speech recognition at the time of invention that Furui's DFT produces frequency spectral parameters to represent the HMMs suitable for implementing McDonough's HMMs for word and phrase spotting, because McDonough points out HMMs as preferred.

Although McDonough prefers HMM representations for the voice, McDonough's omission of particular details regarding HMMs is due to, and is evidence of, the lack of any need for one of ordinary skill in the art of pattern matching to be reminded of such details.

3. Claim 32 is set forth including the limitations of claim 30. McDonough also describes additional limitations as follows:

the user specifying actions to be performed if the voice representation is found in the voice message [at column 2, lines 1-24, as the user specifies the correctness of the action associated with the word to route the message according to the action associated with the word];

storing the user specified actions [at column 2, lines 1-24, as the user specifies the correctness of the action to create a new node associating an action with a word];

the user specified actions are included in performing the stored actions [at column 2, lines 1-24, as route the message according to the action associated with the word for which the user specifies the correctness of the action associated with the word].

4. Claim 35 is set forth including the limitations of claim 30. Because McDonough's embodiments are directed equally to either processing of phone calls or processing of stored messages, McDonough describes:

forwarding the voice message [at column 12, lines 36-41, as routing a phone call based on the message, where the message is forwarded in the embodiment processing a stored message].

5. Claim 36 is set forth including the limitations of claim 30. Because McDonough's embodiments are directed equally to either processing of phone calls or processing of stored messages, McDonough describes:

the voice message is received over a telephone line [at column 2, line 19, as speech over the telephone].

6. Claim 37 and claims 39 and 40 are set forth with limitations similar to claim 30. McDonough and Furui describe and make obvious the limitations as indicated there, where a stored voice representation is a predetermined pattern of speech.

7. Claim 41 and claim 43 are set forth with limitations similar to limitations set forth in claim 30. McDonough and Furui describe and make obvious the limitations as indicated there. McDonough also describes additional limitations as follows:

a storage device for storing the information associated with the claimed functionality [at column 12, line 2, as the internal structure of the event detector, for the example at column 2, lines 1-9, the word nodes and action nodes];

a processor for accomplishing the claimed functionality [at column 5, lines 45-46, as a speech event frequency detector].

8. Claim 44 and claim 46 are set forth with limitations similar to limitations set forth in claim 37. McDonough and Furui describe and make obvious the limitations as indicated there. McDonough also describes additional limitations as follows:

a storage device for storing the information associated with the claimed functionality [at column 12, line 2, as the internal structure of the event detector, for the example at column 2, lines 1-9, the word nodes and action nodes];

a processor for accomplishing the claimed functionality [at column 5, lines 45-46, as a speech event frequency detector].

9. Claim 49 is set forth with limitations similar to limitations set forth in claims 30. McDonough and Furui describe and make obvious the limitations as indicated there.

10. Claim 50 is set forth with limitations similar to limitations set forth in claims 37. McDonough and Furui describe and make obvious the limitations as indicated there.

McDonough Epstein and Furui

11. Claims 31, 33-34, 38, 42, 45, and 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] and Epstein [US Patent 6,327,343] in view of Sadaoki Furui, "Digital Speech Processing, Synthesis, and Recognition," Marcel Dekker, Inc., New York, 1989, pp. 225-289, both already of record.

12. Claim 31 is set forth including the limitations of claim 30. McDonough and Furui, however, do not explicitly describe digital conversion of analog signals. [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

a voice message [at column 8, lines 33-35, as stored audio data];

converting the analog voice message from analog to digital [at column 7, lines 1-5, as convert the analog data, such as an analog recorder, into digital data]; and

processing the digitized voice message [at column 9, lines 40-67, as convert voice data].

To the extent that McDonough's data is not innately digitized for the suggested computer algorithms, it would have been obvious to one of ordinary skill in the art of speech processing at the time of invention to include Epstein's analog to digital conversion for McDonough's data or Furui's data because the digital data could be processed on general purpose digital computers or programmable digital signal processors.

For the digital data then, Furui describes:

processing the voice message into phonemes [at page 244, lines 8-28, as short periods of input speech with phoneme-template structure are compared to phoneme reference templates to represent each word by concatenation of phonemes]; and

comparing the phonemes from the voice message with stored voice representations [at page 244, lines 42-44, as match the same phoneme positions between the input speech and reference templates].

13. Claim 33 is set forth including the limitations of claim 30. McDonough describes and make obvious those limitations as indicated there. McDonough [at column 12, lines 40-41] also describes classifying stored voice messages.

McDonough, however, does not explicitly describe classifying the message as urgent.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

marking the message as urgent [at column 17, line 40, as adding an urgency stamp].

Although McDonough describes classifying message, McDonough's does not enumerate any particular classifications. In view of Epstein's labeling a message as urgent, it would have been obvious to one of ordinary skill in the art of message handling at the time of invention to include Epstein's concept of marking as urgent as a classification for McDonough's messages because that would have enabled signaling the addressee that an urgent message is available.

14. Claim 34 is set forth including the limitations of claim 30. McDonough describes and make obvious those limitations as indicated there. McDonough [at column 12, lines 36-41] also describes routing a phone call based on the message.

McDonough, however, does not explicitly describe calling a pager. [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

calling a pager [at column 4, lines 1-3, as transmit a message to the user's pager].

Although McDonough describes routing calls and messages, McDonough does not enumerate any particular terminal type for receiving the message. In view of Epstein's transmission to a pager, it would have been obvious to one of ordinary skill in

the art of message handling at the time of invention to include Epstein's ability to call a pager for McDonough's messages because that would have enabled signaling the addressee when the user is not at home or is out of the office, as Epstein describes [at column 14, lines 47-48].

15. Claim 38 is set forth including the limitations of claim 37. McDonough [at column 11, lines 9-11] also describes implementing algorithms in the C programming language for computing.

McDonough and Furui, however, do not explicitly describe digital conversion of analog signals. [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

a voice message [at column 8, lines 33-35, as stored audio data];

converting the analog voice message from analog to digital [at column 7, lines 1-5, as convert the analog data, such as an analog recorder, into digital data]; and

processing the digitized voice message [at column 9, lines 40-67, as convert voice data].

To the extent that McDonough's data is not innately digitized for the suggested computer algorithms, it would have been obvious to one of ordinary skill in the art of speech processing at the time of invention to include Epstein's analog to digital conversion for McDonough's data or Furui's data because the digital data could be processed on general purpose digital computers or programmable digital signal processors.

For the digital data then, Furui describes:

processing the voice message into phonemes [at page 244, lines 8-28, as short periods of input speech with phoneme-template structure are compared to phoneme reference templates to represent each word by concatenation of phonemes]; and comparing the phonemes from the voice message with stored voice representations [at page 244, lines 42-44, as match the same phoneme positions between the input speech and reference templates].

16. Claim 42 is set forth including the limitations of claim 41. McDonough describes the limitations as indicated there. McDonough [at column 2, lines 17-28] receives input from the user for establishing user selection of words and actions.

McDonough, however, does not explicitly describe an interface between the user and the speech event frequency detector.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein also describes:

a user interface [at column 6, lines 7-13, as a programming interface].

Although McDonough describes receiving input from the user, McDonough does not explicitly describe any means to accept this input. Because McDonough describes user input, it would have been obvious to one of ordinary skill in the art of processing devices at the time of invention to include Epstein's concept of a programming interface with McDonough because that would provide the means for the user to provide the input to train McDonough's neural network to the words and actions.

17. Claim 45 is set forth including the limitations of claim 44. McDonough describes the limitations as indicated there. McDonough [at column 2, lines 17-28] receives input from the user for establishing user selection of words and actions.

McDonough, however, does not explicitly describe an interface between the user and the speech event frequency detector.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein also describes:

a user interface [at column 6, lines 7-13, as a programming interface].

Although McDonough describes receiving input from the user, McDonough does not explicitly describe any means to accept this input. Because McDonough describes user input, it would have been obvious to one of ordinary skill in the art of processing devices at the time of invention to include Epstein's concept of a programming interface with McDonough because that would provide the means for the user to provide the input to train McDonough's neural network to the words and actions.

18. Claim 53 is set forth with limitations similar to limitations set forth in claim 30 and McDonough [at column 5, lines 45-46] also describes a processor for accomplishing the claimed functionality.

McDonough, however, does not explicitly describe that the speech event frequency detector is computer-implemented and with computer-readable contents.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

a computer readable medium whose contents cause the computer to perform the procedure [at column 4, lines 4-30, as associated memory for software implemented on a computer to accomplish the functionality].

To the extent that McDonough's system does not necessarily contain typical computer hardware and software, it would have been obvious to one of ordinary skill in the art of implementing functional descriptions of operations at the time of invention to include Epstein's concept of computer implementations by software loaded in computer-readable memory to achieve McDonough's speech processing functionality because that would have provided the best implementation under particular circumstances identified and evaluated by a skilled artisan. For example, it is within the ordinary skill of an artisan to determine that software elements, such as Epstein's concept, benefits changing processing functions or adding other processing functions because software elements are more easily modified than hardware elements.

19. Claim 54 is set forth with limitations similar to limitations set forth in claim 37 and McDonough [at column 5, lines 45-46] also describes a processor for accomplishing the claimed functionality.

McDonough, however, does not explicitly describe that the speech event frequency detector is computer-implemented and with computer-readable contents.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

a computer readable medium whose contents cause the computer to perform the procedure [at column 4, lines 4-30, as associated memory for software implemented on a computer to accomplish the functionality].

To the extent that McDonough's system does not necessarily contain typical computer hardware and software, it would have been obvious to one of ordinary skill in the art of implementing functional descriptions of operations at the time of invention to include Epstein's concept of computer implementations by software loaded in computer-readable memory to achieve McDonough's speech processing functionality because that would have provided the best implementation under particular circumstances identified and evaluated by a skilled artisan. For example, it is within the ordinary skill of an artisan to determine that software elements, such as Epstein's concept, benefits changing processing functions or adding other processing functions because software elements are more easily modified than hardware elements.

(10) Response to Argument

Ground of Rejection #1

All arguments regarding this grounds of rejection are rendered moot, as all rejections that fall under this heading have been withdrawn by the examiner.

Ground of Rejection #2

Arguments A and B

These arguments are rendered moot, as the rejections to which they apply have been withdrawn by the examiner.

Argument C: Claim 33

First, appellant contends, see page 45, that claim 33 is patentable based on its dependency on claim 30. However the examiner disagrees because the examiner believes claim 30 to be properly rejected as addressed below.

Next, appellant argues, see page 46, that the mood stamps of Epstein do not teach or render obvious "marking a message as urgent." The examiner respectfully disagrees. Appellant contends that because Epstein's mood indications are applied to facsimile and email messages, it would not have been obvious to apply these mood stamps to voice messages. However, Epstein column 13 line 60 also contemplates organizing and being able to retrieve urgent voice messages. Thus Epstein also contemplates marking voice messages (indexing) as urgent as well as fax and email messages. Otherwise, the system of Epstein would not be able to retrieve urgent messages. Thus, Epstein teaches and at least suggests the limitations of marking a message as urgent.

Argument D: Claim 34

Appellant argues, see page 47, that McDonough Epstein and Furui do not teach calling a pager. The examiner believes this argument to amount to a mere allegation of

patentability, because there is no explanation of how the cited passage of the prior art differs from the claim limitations.

Argument E: Claim 42 and 45

Appellant argues, see page 48, that McDonough Epstein and Furui do not teach a user interface for receiving user specified actions and a storage device for storing user specified actions. The examiner believes this argument to amount to a mere allegation of patentability, because there is no explanation of how the cited passage of the prior art differs from the claim limitations.

Argument F: Claim 53

Appellant states that the patentability of this claim will be argued with that of claim 30. Examiner will argue the patentability of this claim with claim 30 as well.

Argument G: Claim 54

Appellant states that the patentability of this claim will be argued with that of claim 30. Examiner will argue the patentability of this claim with claim 30 as well.

Ground Of Rejection #3

Argument A: Claims 30, 35, 36, 37, 40, 41, 43, 44, 46, 49, 50, 53, and 54

Appellant argues, see pages 52-53, that Furui does not teach the limitations of "a predetermined pattern representing a tone of speech" or a "a predetermined pattern

representing a frequency of speech." The Appellant argues that the examiners interpretation is contrary to the specification. The examiner contents, that while Furui does not specifically teach the limitations as described in the specification, these limitations are not the only reasonable interpretation of the claim language as written. In the field of speech recognition, it is well understood that "patterns of tone" or "patterns of frequency" may be used as features for recognition in Hidden Markov systems. Because of this well known meaning, this interpretation may fairly be read on the limitations of the claims. Applicant cites to a portion of the specification that uses tone and frequency (on a broader time scale) to recognize emotional characteristics of the speech. The claims only require "recognizing patterns." Recognizing words using HMM's can be considered "recognizing patterns" as much as recognizing emotions can be considered recognizing patterns. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Argument B: Claims 32 and 39

Appellant argues, see page 54, that McDonough fails to teach the limitations required by the claims, because McDonough teaches a system where all possible actions are known. However, it is noted that there is no language in these claims that requires that user specified actions be unknown to the system. Thus, it is the examiner's position that McDonough teaches the limitations required by these claims. For instance in McDonough, a user may specify a known command, as pointed out by

the appellant. This is not contrary to the claim language, which only requires that a user specify a command. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

(11) Related Proceeding(s) Appendix

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Douglas C Godbold/

Examiner, Art Unit 2626

/Richmond Dorvil/

Supervisory Patent Examiner, Art Unit 2626

Conferees:

Richmond Dorvil

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